

VGLA COE Organizer

Mathematics 6

Place evidence that has been collected for submission behind the VGLA COE Organizer. Cardstock or colored paper may be used to assist in the organization of the COE.

6.1 The student will		
		identify representations of a given percent and
		describe orally and in writing the equivalence relationship among fractions, decimals, and percents.

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6.2 The student will describe and compare two sets of data, using		
		ratios, and
		appropriate notations, such as a/b , a to b , and $a:b$.

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6.3 The student will		
a)		find common multiples and factors, including
		least common multiple and
		greatest common factor;
b)		identify prime and composite numbers and
		describe prime and composite numbers; and
c)		identify the characteristics of even and odd integers and
		describe the characteristics of even and odd integers.

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6.4 The student will compare and order whole numbers, fractions, and decimals, using		
		concrete materials,
		drawing or pictures, and
		mathematical symbols.

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6.5 The student will		
		identify,
		represent,
		order, and
		compare integers.

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6.6 The student will		
a)		solve problems that involve addition, subtraction, multiplication, and/or division with
		fractions and mixed numbers, with and without regrouping, that
		include like and unlike denominators of 12 or less, and
		express their answers in simplest forms; and
b)		find the quotient, given a dividend expressed as a decimal through thousandths and a
		divisor expressed as a decimal to thousandths with exactly one non-zero digit.

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6.7 The student will use estimation strategies to solve multistep practical problems involving		
		whole numbers,
		decimals, and
		fractions (rational numbers).

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6.8 The student will solve multistep consumer-application problems involving		
		fractions and
		decimals and
		present data and conclusions in paragraphs, tables, or graphs.
	<i>Planning a budget will be included.</i>	

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6.9 The student will compare and convert units of measure for length, area, weight/mass, and volume within the U.S. Customary system and within the metric system and estimate conversions between units in each system:		
a)		length
		part of an inch (1/2, 1/4, and 1/8),
		inches,
		feet,
		yards,
		miles,
		millimeters,
		centimeters,
		meters, and
b)		kilometers;
		weight/mass
		ounces,
		pounds,
		tons,
c)		grams, and
		kilograms;
		liquid volume
		cups,
		pints,
		quarts,
d)		gallons,
		milliliters, and
		liters; and
		area – square units.
		<i>*The intent of this standard is for students to make ballpark comparisons and not to memorize conversion factors between U.S. customary and metric units.</i>

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6.10 Using standard and nonstandard units of measure the student will estimate and then determine		
		length,
		weight/mass,
		area, and
		liquid volume/capacity.

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6.11 The student will		
		determine if a problem situation involving polygons of four or fewer sides represents the application of perimeter or area and
		apply the appropriate formula.

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6.12 The student will		
a)		solve problems involving the circumference and/or area of a circle when given the diameter or radius; and
b)		derive approximations for pi (π) from measurements for
		circumference and diameter, using concrete materials or computer models.

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6.13 The student will		
a)		estimate angle measures, using 45° , 90° , and 180° as referents, and
		use the appropriate tools to measure the given angles; and
b)		measure and draw
		right angles,
		acute angles,
		obtuse angles and triangles.

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6.14 The student will identify, classify, and describe the characteristics of plane figures, describing their		
		similarities,
		differences, and
		defining properties.

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6.15 The student will determine congruence of		
		segments,
		angles, and
		polygons by direct comparison, given their attributes.
		Examples of non-congruent and congruent figures will be included.

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6.17 The student will		
		sketch models of:
		rectangular prism,
		cone,
		cylinder, and
		pyramid.
		construct models of:
		rectangular prism,
		cone,
		cylinder, and
		pyramid.
		classify solid figures.

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6.18 The student, given a problem situation, will collect, analyze, display, and interpret data in a variety of graphical methods, including		
a)		line,
		bar, and
		circle graphs; <i>circle graphs will be limited to halves, fourths, and eighths.</i>
b)		stem-and-leaf plots; and
c)		box-and-whisker plots.

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6.19 The student will describe		
		measures of central tendency
		mean,
		median, and
		mode,
		describe the range, and
		determine their meaning for a set of data.

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6.20 The student will		
a)		make a sample space for selected experiments and represent it in the form of a list, chart, picture, or tree diagram; and
b)		determine and interpret the probability of an event occurring from a given sample space and represent the probability as a ratio, decimal, or percent, as appropriate for the given situation.

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6.21 The student will investigate, describe, and extend numerical and geometric patterns, including		
		triangular numbers,
		patterns formed by powers of 10, and
		arithmetic sequences.

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6.22 The student will investigate and describe concepts of		
		positive exponents,
		perfect squares,
		square roots, and,
		for numbers greater than 10, scientific notation.
		Calculators will be used to develop exponential patterns.

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6.23 The student will		
a)		model and solve algebraic equations, using concrete materials;
b)		solve one-step linear equations in one variable, involving
		whole number coefficients and
		positive rational solutions; and
c)		use the following algebraic terms appropriately:
		<i>variable,</i>
		<i>coefficient,</i>
		<i>term,</i> and
		<i>equation.</i>